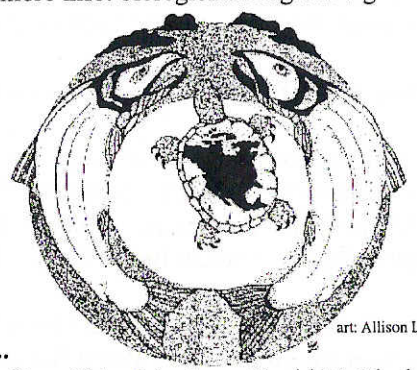
Bioregional Gatherings

Since 1984 bioregionalists have been gathering in congress to envision and develop a realistic, restorative way of life in the bioregions of the Americas. The gatherings operate by consensus, allow for open agendas, and work to build a common commitment. Workshops, circles, councils, and cultural celebrations are all part of the week long discussion. Participants of bioregional congresses live in community, and concern themselves with the things that matter, returning home informed and inspired. The gatherings are open to the participation of all, especially those actively employing ecological precepts in the many movements and endeavors necessary for the human species to reinhabit the bioregions of the Americas and of the whole Earth.

This year's congress will be held at Earthaven Ecovillage, an off-grid, intentional community of about 75 people who are dedicated to learning and teaching replicable models of sustainable human culture. They are located in Katuah bioregion in culturally rich, biologically diverse, western North Carolina, an hour southeast of Asheville.

* The **Ninth Continental Bioregional Congress** at Earthaven Ecovillage in the Katuah Bioregion of the Southern Blue Ridge Mountains of North Carolina - **July 9-17 2005**. For more info: bioregionalcongress.org



art: Allison Lang

***Special Thanks to...**
Tina Floyd, Gita Moulton, Peter Moulton, David McClosky, Tom Jay, Rudy C. Ryser, Jack McCloud, The Evergreen State College, SEED, ERC, CENSE, Rick Gillespie, Amy Green, Martha Henderson, Tyga, Heather Heying, Rob Messick (images pg 3, 19)

Thoughts, Comments, Corrections? Please send any feedback you might have to aboregional@yahoo.com This zine will hopefully become a tool for the communities of this region to use, thus the community's feedback will help it to be all that it can be.

Written by: Jeff Mocniak, with contributions from Tina Floyd

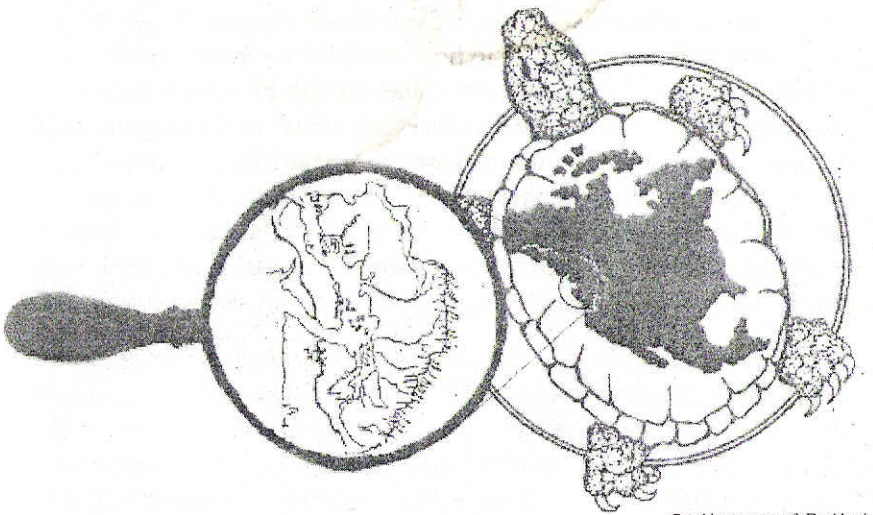
Brought to you by the Step Back Collective

Step Back.
Reinhabit.

CASCADIA

Getting to Know Your Bioregion

With special emphasis on the **Salish Sea Ecoregion**, the **Deschutes Watershed**, and the **Communities of Olympia, Lacey, and Tumwater.**



Graphic courtesy of: Earthbank

"So now we experience a moment when a change of vast dimension is demanded... A period of change from the mechanistic to the organic, from an oppressive human tyranny over the planet to the rule of the earth community itself, the community of all the living and non- living components of the planet, that neither the nation states nor western civilization has ever seen before."
-Thomas Berry

"There is another world, but it is in this one." -Paul Eluard

"Alienation subsides. The human is no longer an outsider, apart. Your humanness is then recognized as being merely the most recent stage of your existence, and as you stop identifying exclusively with this chapter, you start to get in touch with yourself as mammal, as vertebrate, as a species only recently emerged from the rain forest. As the fog of amnesia disperses, there is a transformation in your relationship to other species, and in your commitment to them." -John Seed

"After all, anybody is as their land and sea and air is . . . It is that which makes them and the arts they make and the work they do and the way they eat and the way they drink" -Gertrude Stein

What exactly is a BIOREGION?

A bioregion has been described as a life place, a location that is specific to a culture, to distinct flora and fauna, and to the soils, weather, and topology that are characteristic of that place. Though a bioregion is a geographical location, it is also a frame of mind. It is a way of thinking that includes recognizing one's sense of place, both historically through culture, and through physical interactions with that place.

The first step in defining a particular bioregion is to recognize the natural geographic divisions that exist between regions. Water is one of the most important features to be considered when determining a bioregion's boundaries, as water is like the life-blood of a region. Typically, watersheds are the smallest "sub-units" in a bioregion, aside from individual communities, and are the "organizing principles" of bioregions. Groups of watersheds with similar characteristics are identified as ecoregions, but have loosely defined boundaries. Keep in mind that factors other than just watersheds are to be considered when describing ecoregions and bioregions, and you will soon see why.

Groups of ecoregions in turn, combine to form a bioregion. As described by David D. McClosky of the Cascadia Institute, "Ecoregions are the rooms in the house of a bioregion. Ecoregion is shorthand for regional ecosystem. The ecoregion is a mediating level linked to the habitat or neighborhood, and watershed, on smaller scales, and to the bioregion, continent, and planet, on larger scales in many complex ways." Therefore, one might think of a bioregion as consisting of a group of similar ecosystems. Similar in that the defining characteristics of these ecosystems are shared throughout the bioregion. This might include the semi-arid climate and typical grasslands associated with the great plains, or the seasonally wet climate and green conifers of the northern Pacific rainforests. Bioregions are also described as living systems in which all life-forms are interconnected and interrelated.

Because nature knows no distinct boundaries, bioregions are without strict lines to divide them. Instead, the lines are "soft" or fuzzy and can be many miles wide, gradually fading from one region into another. The boundaries of bioregions usually cross arbitrary political lines created by humans who have been slow to recognize naturally occuring distinctions when creating nations, states, and other subunits. Somewhat ironically though, human cultures, which are greatly shaped by the general nature of a bioregion, also contribute much to its definition.

Charles (Editor); Pyle, Robert Michael
* **A Field Guide to the Common Wetland Plants of Western Washington & Northwestern Oregon.** Cooke, Sarah S. (Editor)
* **Field Guide to the Pacific Salmon.** Steelquist, Robert
* **Pacific Salmon Life Histories.** C. Groot and L. Margolis, editors.
* **King of Fish.** Montgomery, David R.
* **A Field Guide to Pacific States Wildflowers: Washington, Oregon, California and Adjacent Areas.** Peterson, Roger Tory
* **Edible Wild Plants: A North American Field Guide.** Elias & Dykeman
* **The Great Northwest Nature Factbook: A Guide to the Region's Remarkable Animals, Plants, & Natural Features.** Saling, Ann
* **Marine Wildlife: From Puget Sound Through the Inside Passage** Yates, Steve
* **National Audubon Society Field Guide to the Pacific Northwest** National Audubon Society; Alden, Peter
* **Plants and Animals of the Pacific Northwest: An Illustrated Guide to the Natural History of Western Oregon, Washington and British Columbia.**
Kozloff, Eugene N.
* **Seasonal Guide to the Natural Year: A Month by Month Guide to Natural Events: Oregon, Washington and British Columbia.** Davis, James Luther
* **Shells and Shellfish of the Pacific Northwest: A Field Guide.** Harbo, Rick M
* **Wayside Wildflowers of the Pacific Northwest.** Strickle, Dee
* **Nisqually Watershed Glacier to Delta: A River's History.** The Mountaineers and Nisqually River Interpretive Center Foundation
* **Land of the Quinalt.** Seattle: Quinalt Indian Nation. Capoeman, Pauline K.
* **The Indians of Puget Sound.** Gunther, Erna; Haeberlin, Hermann
* **Haboo: Native American Stories from Puget Sound.** Hilbert, Vi
* **Looking at Indian Art of the Northwest Coast.** Stewart, Hillary
* **A Time of Gathering: Native Heritage in Washington State.** Wright, Robin K
* **Peoples of Washington: Perspectives on Cultural Diversity.** White, Sid; Solberg, S.E. (editors)
* **Gardening with Native Plants of the Pacific Northwest : An Illustrated Guide.** Kruckeberg, Arthur R.
* **Grow Your Own Native Landscape: Aguide to Identifying, Propagating, and Landscaping with Western Washington Native Plants.** Leigh, Micheal
* **Landscaping for Wildlife in the Pacific Northwest.** Link, Russel

* ***Northwest Earth Institute*** (nwei.org)
* ***Center for World Indigenous Studies*** (cwis.org)
* ***The Mountaineers*** (mountaineers.org)
* ***Northwest Ecobuilding Guild*** (ecobuilding.org)
* ***People For Puget Sound*** (pugetsound.org)
* ***Seeds of Simplicity*** (simpleliving.net)
* ***Save Our Wild Salmon Coalition*** (wildsalmon.org)
* ***Volunteers for Outdoor Washington*** (trailvolunteers.org)
* ***Washington Toxics Coalition*** (watoxics.org)
* ***Wilderness Awareness School*** (wildernessawareness.org)
* ***Thurston Conservation District*** (thurstoncd.com)
* ***WSU Extension*** (thurston.wsu.edu)
* ***Olympia Master Builders*** (omb.org)
* ***South Puget Sound Salmon Enhancement Group*** (spsseg.org)
* ***Building Green*** (buildinggreen.com)
* ***Washington Invasive Species Coalition*** (invasivespeciescoalition.org)
* ***Northwest Environment Watch*** (northwestwatch.org)
* ***City of Olympia Website*** (ci.olympia.wa.us)

Books:

* **Ethnobotany of Western Washington**. Gunther, Erna
* **Respecting the Knowledge: Ethnobotany of Western Washington.** Lombardi, Angel
* **Medicinal Plants of the Pacific West.** Moore, Michael.
* **Plants of the Pacific Norhtwest Coast.** Pojar, Jim and MacKinnon, Andy
* **Discovering Wild Plants Alaska, Western Canada, the Northwest.** Schofield, Janice J.
* **Mushrooms Demystified.** Arora, David
* **Mushrooms of Northwest North America.** Schlkwijk-Barendsen, Helene
* **Beachcomber's Guide to Marine Life of the Pacific Northwest.** Niesen, Thomas M., Kunz Michael K. (Photographer), Wood, David I. (Illustrator)
* **Birds of the Pacific Northwest Coast**. Baron, Nancy; Acorn, John; Ross, Gary (Illustrator), Alde, John
* **Birds of the Pacific Northwest Mountains: The Cascade Range, the Olympic Mountains, Vancouver Island, and the Coast Mountains.** Wassink, Jan L.; Ort, Kathleen (Editor)
* **The Emerald Sea: Exploring the Underwater Wilderness of the Pacific Northwest and Alaska.** Swanson, Diane; (Contributor), Sanders, Dale (Photographer)
* **The Enduring Forests: Northern California, Oregon, Washington, British Columbia, and Southeast Alaska.** Kirk, Ruth (Editor), Mauzy,

....and BIOREGIONALISM?

"Bioregionalism is a cultural idea. It's an attempt to answer, 'Who am I, what am I, and what am I going to do about it?' It's a way for people to look at the place where they live in terms of fitting into natural characteristics. People are conditioned by bioregional phenomena." -Peter Berg

* *"Across the planet, people recognize that we must become guardians of our life-places. Human beings have long understood that security is found in acting responsibly at home, in our neighborhoods and watersheds - our bioregions."*

* *"Bioregionalism calls for active citizenship in the whole of life, the biotic community. While decentralist, Bioregionalism's key understanding is cultural: attention to place, to local history, natural history, and to how a community's hopes, wounds, and dreams can inform enduring ways of life that will heal and sustain the planet's bioregions and their inhabitants."*

* *"Bioregionalism cultivates learning the natural history of all our relations in order to craft diverse human societies respectful of place and planet."*

* *"Bioregionalism means working to satisfy basic needs locally, relying on renewable energy and sustainable agriculture, developing local enterprises based on local skills and strengths."*

* *"Bioregionalism challenges and is an alternative to nationalism, corporate rule, and top-down globalization of our lives."*

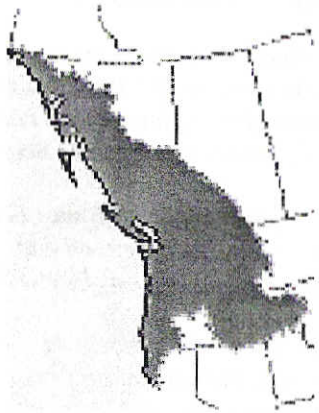
* *"Bioregionalism embraces the struggle to preserve, restore and enhance the life of the places that constitute the planet."*

* Excerpts borrowed from the 9th Continental Bioregional Congress website.
see - ***bioregionalcongress.org***

"Bioregionalism deals with the bioregion as a whole system comprised of a set of diverse, integrated natural sub-systems (atmospheric, hydrologic, biologic, geologic) run by ecological laws with which humans (as one species among many) must work in cooperation if there is to be a sustainable future. These laws form the basis for the design of all long-term human systems, economic, technological, agricultural, and political. Political ecology is the politics of bioregionalism"

- Peter berg

Home Sweet Home: The Cascadia Bioregion



Cascadia, named so because of its abundance of cascading waterfalls, is a bioregion that is typically referred to as the Pacific Northwest. Cascadia can be defined as the watersheds of rivers that flow into the Pacific Ocean through Turtle Island's temperate rain forest zone (Turtle Island is the native term used for the continent commonly referred to as North America). Twenty of the forty largest rivers on the continent are included in this region of watersheds.

Cascadia's physical geography extends from southern Alaska to northern California, and from the Pacific coast to the continental divide, taking in Washington, most of Oregon, Idaho and British Columbia; and parts of Alberta, Montana, and California. This area is distinguished by zones of similar climate, vegetation, and animal species. These climates include: coastal marine, coastal rainforest, dry interior, and Rocky Mountains. Also part of Cascadia is an offshore tectonic plate referred to as the Juan de Fuca plate, which has been instrumental in creating Cascadia's unique attributes. All of these features will be discussed in detail as we go along.

Other distinguishing titles held by Cascadia include: the home of the world's only white (but not albino) black bear; the world's second largest slug; the world's second highest density of bald eagles; the Pacific ocean's longest migration of salmon; the greatest amount of rain on the continent; and it has one of the fastest growing human populations of any region on the continent.

Put together, these attributes make Cascadia unique to Turtle Island, unique to the world in fact. Nowhere else will one find such large swaths of temperate rainforests or huge runs of salmon. Cascadia is a bioregion cherished by its people for what it provides them, whether it be material goods or its aesthetics and beauty.

*** Turn to the middle, pages 21 & 22, for a map of the Cascadia Bioregion.**

Resources

*** Without the following texts, web sites, and organizations, this zine would not have been possible. Thank You.**

* ***Streamside living: Thurston County Storm & Surface Water Program*** (www.co.thurston.wa.us/wwm/stream/onthego.htm)
* ***Pacific Groundwater Group*** (www.pgwg.com/services_asr_thurston.html)
* ***American Civil Liberties Union of Washington*** (aclu-wa.org)
* ***Puget Sound Action Team*** (psat.wa.gov/)
* ***Go Northwest*** (.com)
* ***Inforain***(.org)
* ***Washington Environmental Protection Agency (EPA)*** www.epa.gov/water/states/WA/
* ***Downtown Neighborhood Association*** (olydna.com)
* ***Procession of the Species*** (www.procession.org)
* ***Media Island International*** (mediaisland.org)
* ***The Burke Museum of Natural History and Culture*** (washington.edu/burkemuseum)
* ***Scorecard: The pollution information site*** (www.scorecard.org)
* ***The Olympia Historical Society***
* ***Washington State Employment Security***
* ***Planet Drum:*** Bioregionalism (planetdrum.org)
* ***Bioregional Congress*** (bioregionalcongress.org)
* ***Watershed Sentinel*** (rfu.org/wss.htm)
* ***Cascadia Institute*** *and* ***Columbiana*** (columbiana.org)
* ***Thurston County Farm Map*** (fertileground.org)
* ***CSA directory*** (seattletilth.org)
* ***South Sound Green Pages*** (olywa.net/speech)
* ***Natural Choice Directory of Puget Sound*** (naturalchoice.net)
* ***Freecycle Olympia*** (freecycle.org)
* ***River history Project*** (riverhistory.ess.washington.edu)
* ***Climate Solutions*** (.org)
* ***Sound Hours*** (local currency) (www.olywa.net/roundtable/index.html)
* ***Reclaim the Commons*** (.org)
* ***Organic Volunteers*** (.com)
* ***The Permaculture Activist*** (www.permacultureactivist.net/)
* ***NW Energy Coalition*** (www.nwenergy.org/)
* ***Earth Ministry*** (.org)
* ***Bicycle Alliance*** (.org)
* ***Society of Primitive Technology*** (primitive.org)

* The **Washington State Nursery and Landscape Association** is sponsering a project that aims to educate property owners, naturalists, outdoor rec. enthusiasts, and the horticulture industry about invasive plant species that threaten natural plants and the animals that depend upon them for sustenance. One of their main goals is to create codes that nurseries could follow to provide non-invasive alternatives to the invasive species.

* Though still a long ways from sustainability, power companies such as **Puget Sound Energy (PSE)** are beginning to offer customers the chance to purchase "green power" which comes from renewable resources such as solar and wind energy.

* A 1974 U.S. Supreme Court ruling in U.S. vs. Washington established Northwestern tribes as co-managers of the states salmon fisheries and entitled them to 50 percent of the harvestable number of salmon returning to Washington waters. Following the ruling, the tribes created the **Northwest Indian Fisheries Commission (NWIFC)** to assist them in conducting orderly and biologically sound fisheries. Other federal court rulings concerning shellfish harvest rights coupled with all other natural resource concerns have summoned all tribal members to participate in the natural resource management in their region.

* The **Stream Team** program was started for citizens interested in protecting and enhancing water resources in Thurston County watersheds. The program is jointly coordinated by the City of Olympia, the City of Lacey, the City of Tumwater and Thurston County.

* **Emma Goldman Youth & Homeless Outreach Project (EGYHOP)**, is a local group whose "mission is dedicated to bringing direct service items and resources to the homeless and low-income populations living on the streets or who self-identify as part of the street population. This population is made up of youth-at-risk, homeless, and low-income people living below the poverty line. Street outreach workers provide direct service on the streets of Olympia." It also heads a bike project that provides free bikes to low/no income people. They do accept donations of used bikes or parts. Contact: Long Hair David 360.791.2241

* The **Native Plant Salvage Project**, which is organized by the WSU Extension of Thurston County, works to save native plants from areas threatened by new developements. They teach workshops that include skills such as: naturescaping, propagating native and other drought-resistant plants, native plant identification, and low-maintenance landscape design.

Geography and Weather of Cascadia

The story of Cascadia starts long before the written history of humans, long before the current flora and fauna, now prevalent to the region, ever appeared. This story begins some 1.2 billion years ago, when the ancient, giant continent geologists call "Rodinia" was the prominent land mass on earth. Rodinia met its demise about 750 million years ago when it broke apart along a giant rupture that cut through what is now eastern Washington. The new continents moved apart, creating the Pacific ocean, and eventually formed a new "super-continent" called Pangaea.

Like Rodinia, Pangaea would fall victim to the internal pressures of earth and would break apart to eventually form the continents we know today. The North American plate began to drift westward, colliding with, and welding to exotic volcanic islands of the Pacific. About 200 million years ago, there began a series of four major geologic episodes that have given Cascadia some of the most spectacular landscapes on the continent. Drifting tectonic plates caused volcanic activity, plate subduction, and continental uplift, which, along with thousands of years of glacial activity, are to thank for the mountains, rivers, and coastline that we all cherish.

More locally, the Puget Sound area is a result of what geologists suspect to have been the earth's crust sinking around faults. This caused a "trough" to be formed which runs from the Strait of Georgia in B.C. to the Willamette Valley in Oregon. The Puget Sound and it's associated waterways are made up of a system of drowned glacial valleys, with the Olympia area being the southernmost point of a vast area that was covered by glaciers during the last major ice age. Upon underlying basalt bedrock sits rock, gravel, and finer materials that were bulldozed, then dumped into irregular piles and mounds. The lands surrounding the Puget Sound are underlain by as much as 3,000 feet of glacial and other sedimentary deposits.

South of the glacier, meltwater carved a runoff system of rivers and streams which, combined with the other geologic features, present a pattern trace-able to the events of an ice age that ended 13,000 years ago. The dominant landmarks however, are the volcanoes that have come to represent Cascadia's beautifully mountainous regions. At 14,410 feet, Mt. Rainier is the tallest, and its prominence has been revered by the peoples of this region for millenia.

When considering the physical features of, and influences upon the Cascadia Bioregion, one must not forget the Pacific ocean. From the western edge of the continent, continues out into the Pacific the Cascadia Shelf, a submerged continental shelf that is believed to have been the actual edge of the continent when ocean levels were lower. Upon this shelf sits the Cascadia Basin, which is fed by the Columbia River, the source of a plume of freshwater that shoots 200 miles out to sea. The Pacific Ocean itself is comprised of an array of currents flowing from west to east in some areas, east to west in others. One specifically affecting this region is the North Pacific Current, which approaches Cascadia from the north central Pacific. It splits into two upon reaching Cascadia's continental slope, the north-flowing Alaskan Current and the south-directed California Current.

Two main weather pressure cells work synergistically with the ocean currents to create powerful mid-latitude jet streams which spray Cascadia with storm fronts in the winter. The movement of these pressure cells up and down the continent provide Cascadia with its seasons, primarily the (usually) warm, wet winters and (usually) dry, cool summers. Average temperatures of the Puget Sound area remain around 58 degrees (F) in summer, and 39 degrees (F) during colder months. Winter storms in the Puget Sound are usually generated by a clashing of cold Arctic air with warmer marine air from the Gulf of Alaska. But sometimes they arrive via the "pineapple express", a jet stream which gathers heat and moisture from the tropical Pacific Ocean near the Equator (and near Hawaii, hence the pineapple).

Because many of these storms are circulating in a counter-clockwise direction, they generally collide with Cascadia's coast from a southwest direction. Through the Chehalis Gap (a break in the coastal mountains denoted by the Chehalis River) the winter storms creep, picking up speed as they go, until the air becomes turbulent and unloads its moisture upon the South Sound. This weather gives the region an annual average rainfall of 51.28 inches. Most of this arrives in the three months of November through January.

These weather patterns give birth to great watersheds which contribute 20 to 25 percent of the continent's total surface runoff. Fed by these great watersheds are lush temperate rainforests that are home to intricate ecosystems. Which leads us to the next leg of our journey in understanding the place in which we live: Ecoregions.

Current Groups in Action

One of the purposes of this zine is to stress the importance of fostering an understanding and integration of regional ecological principles among the public who create the land management and natural conservation policies in their region. Whether it be now or well into the future, bioregional concepts will prove to be a vital tool in creating sustainability within our communities. In the end, it is ultimately up to the whole populous to make the changes happen, and we believe that those changes begin with a sense of place. There exists in this region a great number of people working together to raise awareness of the numerous challenges that we face, and to offer solutions that will better our ecosystems. Here are just a few:

* Thriving local agricultural is an essential component to the long-term sustainability of a community. Local agriculture supports the regional self-reliance for food and jobs, which are key to a healthy community. They also preserve rural land holdings and help reduce the dependence on petroleum products, which improves habitat protection and preserves our scenic open spaces. **Farmers markets, roadside farm stands**, and **CSA's** all help to improve community-wide awareness, appreciation, and support for local farmers. Groups such as **Safe Food for Change**, and the **Farm Bank Project** are working to educate people about local agricuture, while supporting those who are in need of food at the same time.
E-mail Mitch at **farmbankproject@yahoo.com** for details.

* While supposedly only a "temporary use of the land", the impacts from mining often continue long after production stops. Many serious risks, such as Acid Mine Drainage (AMD) go un-addressed, while thousands of closed and abandoned mines create potential hazards. This is why the **Western Mining Activist Network (WMAN)** formed in 1997 to share info, inspiration, and strategies. Comprised of over 75 organizations, WMAN continues to work together to address mining and environmental issues.

* The issue of garbage just stinks! What to do with all that trash? Well, recycling programs are improving and cities such as Seattle are even beginning to make recycling mandatory. The city of Olympia has switched its fleet of 40 garbage trucks to bio-diesel, which is expected to cut emissions by 16 percent, and eliminate 200 tons of greenhouse gasses per year. The old landfill near Olympia found itself converted to an interpretive park that promotes waste reduction, recycling, and low impact gardening. Right next door is the **Hazo-House**, where hazardous materials can be dropped off, or even picked up if some one has a use for a potential waste such as paint.

Ah yes, the sewage. Every day, 170 billion gallons of effluent flow from municipal sewage treatment plants and industrial facilities throughout the Salish Sea ecoregion into the Puget Sound, Fraser River, Straits of Georgia, and Straits of Juan de Fuca. That's a lot of $#@*! True, but add to that another 16 million gallons of untreated sewage each day, and it really begins to get deep.

The city of Olympia is the fortunate facilitator of its region's sewage, operating and maintaining the LOTT (Lacey-Olympia-Tumwater-Thurston County) Wastewater Alliance. It's facilities include the Budd Inlet Treatment Plant, three pump stations and over 300 miles of pipe that handle almost 12 million gallons a day. The wastewater comes from storm drains, residential, commercial, and industrial users, and is a combination of water, suspended solids and dissolved solids. LOTT has 80,500 sewer customers, which calculates out to almost 150 gallons of sewage per customer each day, on average.

If you live outside the urban confines and sewer systems, than you probably have a septic system and drainage field (unless you use a composting toilet, which are now legal under Olympia's building code - then hats off to you!). If this is the case, then the wastewater from all your household plumbing flows into a septic tank. Incoming solid material settles to the bottom - the sludge, and lighter material floats to the top, forming a scum layer. The sludge and scum slowly build up in the compartments of your tank, and need to be pumped out - which is done by a local septic hauler every 3 to 5 years and hauled to either the LOTT sewage treatment plant or to the Biorecycling plant (Lewis County). The wastewater in your tank trickles through a bed of gravel to filter it and then into the soil. After treatment at the LOTT facilities, the solids are trucked off and eventually applied to agricultural land east of the Cascades. Water from LOTT gets pumped into the Budd inlet. Salmon anyone?

- speaking of salmon, are you aware of where your **food** is coming from or what's in it?

With an endless selection of food available on the shelves of grocery stores, it's next to impossible to keep track of where your food comes from and what it's made from. Or is it? Although most major chain stores and large-scale grocers provide food to the consumer regardless of its origin or composition, there are stores out there that are more conscious of the quality and implications of the food they supply. Places such as the two Olympia Food Co-ops provide customers with a wide array of choices, yet at the same time, maintain a selection that is fair trade, organic or "natural", and local/in season. Though not perfect, these stores are at least trying to help the consumer to be conscious of their purchases. On average, food travels 1,300 miles from the producer to the consumer. This shipping consumes massive amounts of fuel, adds costs to goods, and hurts the local economy by cutting out the small local farms. See the resources section for the local food connections that will help you to reverse the aforementioned trends. Also, check out your local farmers markets and the CSA's for more local, fresh options.

What are ECOREGIONS and what does mine consist of?

The term ecoregion means different things to different people. How to exactly define one is still debated, but most definitions are quite similar. For the purposes of tying in the concepts of this zine, we will use an explanation given by David D. McClosky of the Cascadia Institute:

"An ecoregion is a relatively similar area united by common geography, ecology, and culture. Ecoregions are distinct places which help articulate the internal diversity of a large and complex region such as Cascadia."

As you can see, the Puget Sound region is one which fits the criteria of this definition, having specifically defining geography, distinct flora and fauna, and a culture unique in and of itself; these features are what help us to realize the Ecoregion we all share. There also exist discrepencies in the actual name of the Puget Sound's Ecoregion. Some call it the Puget Sound-Georgia Basin, others refer to it as the Salish Sea, or the Ish River Ecoregion. The ecosystem they all refer to remains the same though, and the following quote is offered as an excellent description of this Ecoregion:

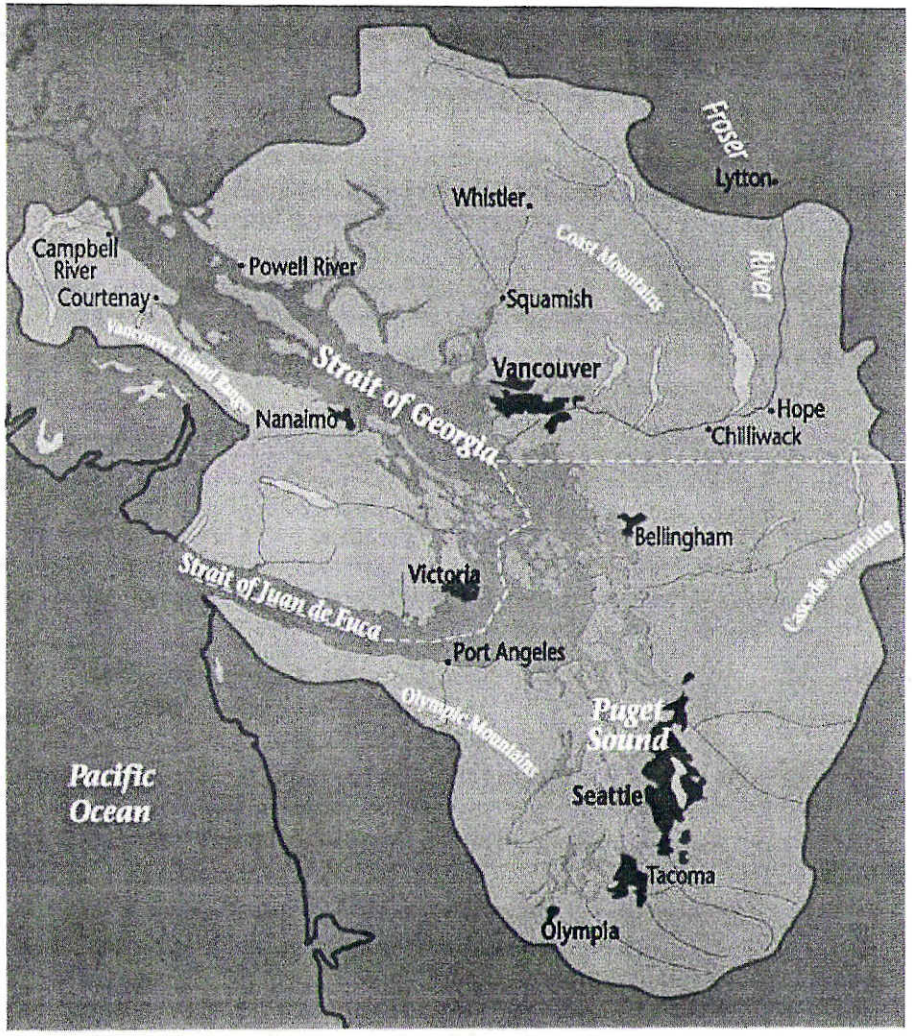
"The shared waters of British Columbia and Washington form one large hydrologic system composed of three natural basins. To the north lies the Strait of Georgia; to the south, lies Puget Sound; and connecting the two with the Pacific Ocean is the Strait of Juan de Fuca. In combination, these systems form an estuary, 'where seawater from the open Pacific Ocean is diluted by fresh water from numerous rivers... originating high in the surrounding glaciated mountains.' The muddy shores of the inland sea created by Puget Sound and the Strait of Georgia provide habitat for commercial and recreational shellfish such as oysters and crabs. The upland habitats, from the water's edge to the highest mountains, play a particularly critical role in maintaining the health of the ecosystem."

Borrowed from.....
Case Study from Transboundary Collaboration in Ecosystem Management: Integrating Lessons from Experience. Completed by Naureen Rana, University of Michigan School of Natural Resources and Environment, April 17, 2001

U.S. Environmental Protection Agency, "Shared Waters: The Vulnerable Inland Sea of British Columbia and Washington," http://www.epa.gov/region10/www/regional/pugsnd/ bcwaswl.html (September 11,

So now we know what our Ecoregion consists of. For the sake of clarification, this zine will refer to this Ecoregion as the Salish Sea, or simply the Puget Sound region. The Puget Sound itself is large, one of the largest inland seas in what is considered the United States, and the only one shaped by glaciation. It has over 2,000 miles of shoreline and in places can reach depths of over 900 feet. The native people of the region referred to it as "Whulj" - "the saltwater we know". Draining into this body of saltwater that we, the residents of this region know so well, are 12 "major" rivers, and many smaller streams and aquifers. One such river is the Deschutes, which drains into the Sound an area of land referred to as the Deschutes watershed.

The Puget Sound/Georgia Basin Ecosystem: Also known as the Salish Sea *Ecoregion*



Source: Environment Canada, Georgia Basin Ecosystem Initiative

Ecoregion map - Salish Sea

- and the **garbage**?

All the area's garbage has, since the 1940's, been taken to a landfill located in Hawks Prairie just off of I-5 near Marvin road. This all changed when it was permanently closed to garbage in the year 2000. At this point garbage was diverted to the Roosevelt Regional Landfill, owned by Allied Waste, 200 miles east of Olympia. First the garbage goes to the old Hawks Prairie site where it is "processed" at an on-site transfer station. Its then loaded onto trucks and hauled to Centralia. At this point, your garbage "boards" a train where it makes its way eastward. It is then taken off the train (it un-boards), where it is put back onto a truck and driven to its final resting place, the landfill (in Klickitat County). What happened to the original landfill? Its been capped and now goes by the name of Closed-Loop Park.

- how about my **recyclables**?

Glad you asked. Recyclables collected by the city of Olympia get sorted and then sent to Pacific Disposal, which is a private company in Olympia. The rest of the area (outside Olympia) has its recyclables picked up directly by Pacific Disposal who take the material to their facilities. Because Olympia's goods get sorted, and those that P.D. retrieve don't, Olympia's recyclables get shipped separately down to Portland. SP (Southern Pacific) Recycling in Portland receives the all the material, where they further sort, distribute, and/or process it themselves at the Materials Recovery Facility (MRF).

- the **electricity**?

According to Puget Sound Energy (PSE), the primary provider of electricity in the region, the power source breakdown works like this:

- 37% of the regions energy comes from hydro-electric plants. These include PSE's dams on local rivers and power they purchase from other companies whose power is provided by the dams along the Columbia river.
- 30% comes from combustion turbines that are fueled by natural gas.
- 15% comes from colstrip – coal-burning plants in the region.
- 18% comes from a variety of other sources, some of which are renewable sources such as solar and wind.

This collage of energy is fed into the local power grid, in which it is used by residential customers (40%), commercial customers (33%), industry and transportation (6%), and other utilities / marketers (21%).

- and the seemingly magic disappearance of things I **flush down the toilet or dump down the drain**?

Utilities and Other Practicalities

So how aware are you of the modern conveniences that have, through the processes of our civilization, become an everyday part of most of our lives? Do you know where your water comes from? . . .the faucet? How about your electricity? . . .the plug on the wall? When you put out your garbage or recyclables, where do they disappear to? . . .Mars? Well, if you agreed with these answers, read on. If you didn't you may still enjoy a little look into the details of your everyday life.....

- the **water**?

It all begins in the aquifer. Under the surface of Olympia, lies the Puget-Williamette Trough aquifer system, which is an elongated basin that extends southward from the upper reaches of the Puget Sound, down to the central region of the Willamette Valley. Since the late 1940's, most of Olympia and Lacey's water has been pumped from the P-W aquifer through a lagoon at a place near Hawks Prairie called McAllister Springs. About 80 percent of Olympia's water comes from these springs. As the water is pumped directly from the groundwater flow, it is chlorinated "at a very low level" on its way to a supply system. This system consists of a network of over 275 miles of pipe and 11 storage tanks.

Other water comes from a shallower aquifer that covers about 50 square miles south of McAllister Springs. This aquifer is naturally "recharged" by rain water and the flow of this water follows the movement of the local rivers, which is to the north. In fact, like most aquifers, this one is intricately connected to the rivers above it, namely the Deschutes. Which is another good reason to protect your watershed - your drinking water depends on it. Olympia's other sources include five area wells- two at Allison Springs, one on Kaiser road, and two in the southeast part of the City at Shana Park and Hoffman Road. Lacey shares some of the McAllister water, but has over ten other wells in the area. Tumwater receives its water from five wells near the Tumwater Valley Golf Course.

Another source of drinking water that draws thousands of people each month is a free-flowing artesian well in downtown Olympia. Located in the Diamond Parking lot on 4th Avenue between Adams and Jefferson Streets, it is not owned by the city, but by Diamond Parking lot. This means its future is uncertain, but don't fear, there are groups working to establish a permanent public well either there or closeby. "Friends of the Artesians", the City of Olympia, and the Port of Olympia are working together to make this happen.

As for you country folk who don't receive city water, your well is direct, coming straight from the source, which is most likely the aquifer upon which your dwelling sits.

How does a WATERSHED work?

A watershed can be defined as an area of land that drains into a river or lake. Pretty simple. But what isn't so simple is the way in which watersheds have become so ingrained within the natural biological systems that exist about them. Functioning watersheds are vital to humans and to all of the life that rely on them for their survival. Watersheds are the circulatory system of the land, draining ridge-tops through streams and then rivers and finally coming to a confluence in a lake or the ocean.

One can imagine the implications of destroying a watershed, literally cutting off an area's circulatory system. Not a pretty picture, and definitely not beneficial to the life that is reliant upon its well-being. Destruction of a watershed doesn't necessarily mean a "natural disaster". On the contrary, many natural occurrences such as fire, landslides, erosion, and flooding are longtime friends of the watershed - they help to create and maintain the conditions and habitats of the life within them.

Humans rely on watersheds for water of course, but also the soils and minerals concentrated in areas used for farming; the fish and other aquatic beings that live in and depend upon the water for their continued lifecycles; the plants which feed from the water and which help to create the intricate runoff systems; and the various other creatures that thrive in the micro-ecosystems of a watershed. We've come to depend on watersheds for timber, suitable land for farming and grazing, drinking and irrigation water, and the natural beauty around us that we often take for granted.

Human activities can and do at times modify watersheds drastically by exaggerating the natural disturbances to a stream that compromise its health. Humans have also used the "circulatory system" that is a watershed to flush out toxins, such as pesticides, herbicides, and fertilizers. This compromises the health of every living being downstream. Activities such as mining, logging, farming, and land development all contribute to alterations and damage from which the whole watershed suffers. We all share this treasure that is the watershed, so it is vital that we continue to take care of it.

The Deschutes River

The Olympia, Lacey, and Tumwater area is part of a series of river valleys that weave their way through the surrounding hills, eventually emptying into the Puget Sound. The natives of this area called them "cheetwoot" - "The black bear place" or "bear grass". The communities themselves are at the very bottom of a valley referred to as the Deschutes watershed, named so because of the Deschutes river, its defining body of water.

This watershed is bordered on its western side by the Black Hills, which divide the Deschutes watershed and the Upper Chehalis watershed. On the eastern side, a ridge runs between the Deschutes and the Nisqually watershed, characterized by, you guessed it, the Nisqually River. To the northwest of the Deschutes lies the Kennedy-Goldsborough watershed, which is mainly separated

from the Deshutes by the Eld inlet and the Black Hills. To the southeast, near its point of origin, is the Cowlitz watershed. It is here that one will encounter the Deschute's headwaters in the Bald Hills of the Gifford Pinchot National Forest.

There is absolutely too much information about the Deschutes watershed to begin to scratch the surface with this zine. So, for more info about this or other watersheds, check out the Department of Ecology's information system referred to as the "Watershed Resource Inventory Areas" or "WRIA". This system can be accessed online at www.ecy.wa.gov/programs/eap/wrias, or one can call the toll free information number @ 1-800-833-6388. The Deschutes watershed is listed as WRIA 13.

Also keep in mind that when reference is made to the South Sound in this zine, it is generally referring to the Deschutes and its neighboring watersheds.

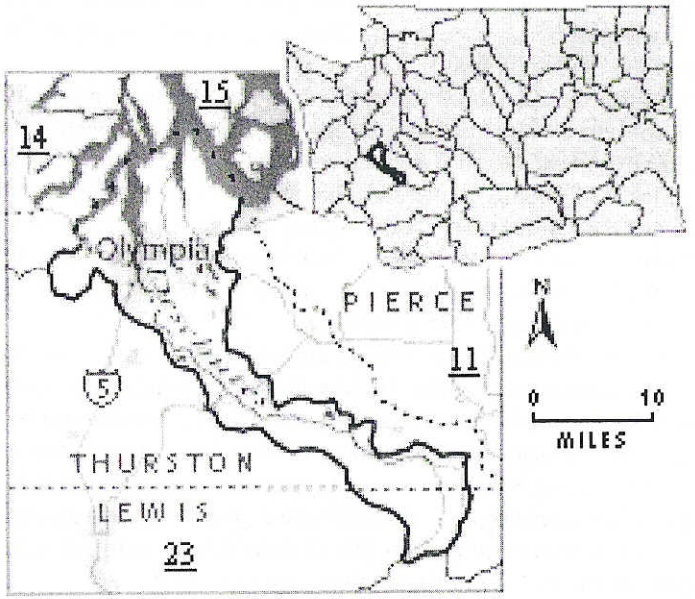


Image courtesy of: Washington State Department of Ecology
Watershed Map - Deschutes

The Deschutes Watershed: Among Many Others

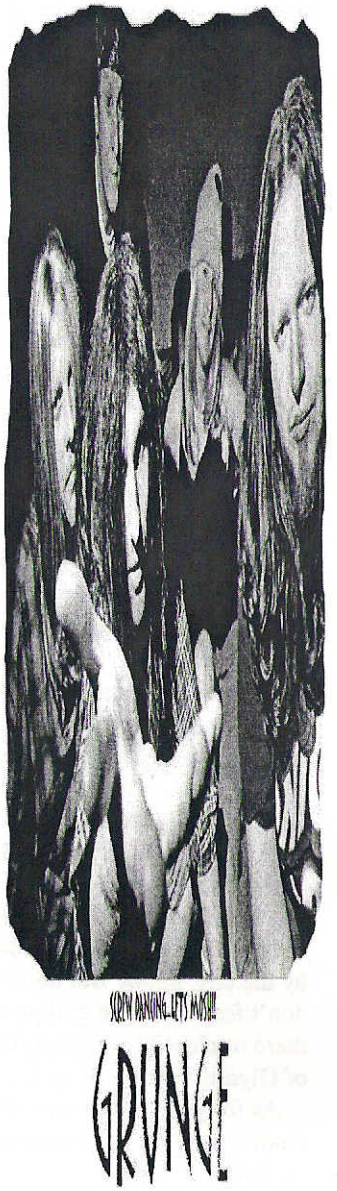
One will notice that groups of watersheds depicted on this map make up areas similar to those areas that define ecoregions, which are depicted on the map in the middle of this zine, pages 20 & 21.

The natural beauty of this region, combined with its multicultural urban centers, has provided for an industry of increasing economic importance, tourism. Already a multi-million dollar industry, tourism promises to bring more and more people to the area to explore. After realizing its splendor, many come back to stay, adding to an already strained economy and environment.

Music & Art: Then & Now

Cascadia is home to a rich heritage of music, art, poetry, and letters. Native arts have enjoyed a resurgence in the region, owing to the realization that these fine arts would soon be lost without new generations to carry on local tribes' rich history of basketry, mask-making, canoe and pole carving, beadwork, storytelling, singing, drumming, and ceremonial dancing. Some notable tribal artists and storytellers include Vi Hilbert, Bill Reid, Greg Colfax, and the late Hazel Pete.

In the non-tribal world, the richness of Puget Sound draws a vibrant pool of artistic talent, and is home to many notable and famous musicians and artists. Olympia is home of the early 90's indy Riot Grrrl movement, as well as the seat of Grunge music, made famous by Kurt Cobain and Nirvana, who began their careers playing Olympia garage parties and local venues. Indy record companies like K Records and Subpop seem to thrive in Cascadia's wildly independent and creative music scene. Other pop musicians and bands that have made their mark from Cascadia include Jimi Hendrix, Steve Miller, Heart, Rikki Lee Jones, Bert Wilson, Sleater-Kinney, Pearl Jam, Soundgarden, and the Melvins, among many others. Writers and poets like Tom Jay, Tom Robbins, David Gutterson, Robert Sund, and Robert Pyle have called Cascadia home. Humorist Lynda Barry, as well as Matt Groening, creator of *The Simpsons*, both began their careers at The Evergreen State College in Olympia. Dale Chihuly, one of the world's most famous modern glass artists and Cascadia native, recently opened the Dale Chihuly Museum of Glass in Tacoma.



million per year in the Puget Sound area. Native peoples, who in the 1970's, gained rights to fifty percent of the region's salmon catch, still rely heavily on this fish for food and income. The Sound's oyster industry is one of the two most significant on the continent. Other water-based employment opportunities can be found in the shipping and marine port industries. Seattle and Tacoma's ports are the largest in the region, second on the continent in container traffic only to the Los Angeles/Long Beach ports. Olympia's port brings in far less, but is still significant in the local economy.

The advanced technology sector of the economy, such as software, biotechnology, medical, and computer related electronics have all become significant players in the local economy, especially that of Seattle. The services sector is still quite vibrant in the area, growing with the communities. This industry includes doctors, architects, lawyers, auto mechanics, and social workers to name a few. Native tribes who have become federally recognized have been given rights to casino ownership, which has become a major source of income for them, and in places are some of the top employers of the area. Logging and mining, though not nearly as important to the economy as they once were, still provide sufficient employment and economic contributions to the local communities. The military is also a significant player in local economics, more so because of the retired service men and women that stay in the area after leaving the military.

Agriculture of the region has diversified to meet local demands and because of manufacturing and shipping accommodations that have materialized. Ranging from aquaculture to apples to trees to sod, the agriculture of the South Sound accounts for more than 15% of the land use and produces hundreds of millions of dollars worth of products a year. A variety of conditions, some of which once hindered the progress of new farmers to the region, now have been found to support a variety of different crops. Well-drained soil types, shallow aquifers, and clean water are some of the beneficial attributes of this region that farmers are now taking advantage of. This has also led to a diversity of types of farms in the region. Large-scale commercial farms, historic family farms, small scale close-to-market produce farms, orchard farms, part-time farming operations, and more recently organic and Community-Supported Agriculture (CSA) farms have sprung up in great numbers.

The Flora of Cascadia

The abundance of moisture in Cascadia has indeed given rise to one of its most prominent features, the rainforest. The coastal rainforests have existed in this area for at least 2 million years, shifting from warm temperate to cold temperate as the climate changed with the changing landscapes. Actually, Cascadia's floral history goes back a lot farther than that. The first plants to make it to land are thought to have arrived in the Silurian Period, about 420 million years ago. Given time and relative geologic stability in the last few thousand years, the Cascadia Bioregion has amassed a huge collection of plants; thousands of species in fact, with the Washington area alone containing nearly 3,200 species of vascular plants. From lush coastal rainforests to dry sagebrush plains, from wet prairies of the inland river valleys to the high alpine meadows, Cascadia's diverse landscapes have given birth to some of the world's most diverse ecosystems.

- **Climax forest communities** of the region are a mix of conifers and deciduous trees which include:
**western red cedar* **Sitka spruce* **western hemlock* **Douglas fir*
**big-leaf maple* **red alder* **black cottonwood*

- **Epiphytes** (a plant that derives moisture and nutrients from the air and rain and usually grows on another plant) are common in these forests, and include:
**mosses* **lichens* **ferns* **liverworts* **selaginella* *occasional *shrubs*
In fact, there are over 500 species of lichens in the Cascadia region! Lichens play an intricate part in the region's forests. Many have the ability to absorb nitrogen from the atmosphere and turn it to organic compounds essential to growth. As the lichens fall to the forest floor, they provide a key winter food for deer and elk, and also provide one-quarter to one-half of the nitrogen that fertilizes the forest's floor.

- Along the **edge of the coast**, in the "fog belt", *Sitka spruce* dominate the forest. *Shore pine* is the first resident tree to move into a **coastal grassland**, followed by the Sitka. Smaller plants and grasses that frequent the **ocean's shore** include:
**Scouler's surfgrass* **maritime plantain* **red fescue* **bluegrass*
....growing just below sea cliff meadows.

-Sandy beachs are home to:
**sea rocket* **silver bursage* **large-headed sedge* **honkenya*
**yellow sand verbena* **beach carrot*

....which grow in open sand between vegetated dunes and high tide. There are also an abundance of Epiphytes here.

- In the interior of Cascadia one can find **white oak woodlands** and **savannas**, and down in the valleys, **floodplain forests**. The wetland forests include:
** black cottonwood *Oregon ash *willows *maples *red alder*

- **Swamps**, which are wet almost year round, compared to the floodplains which are wet only occasionally, are composed of:
**Sitka spruce *western hemlock *red alder *willows*
**Oregon ash * western red cedar *crabapple *cottonwoods*

- The **understory species** of these forests include:
**service berry *salmonberry *sword fern *evergreen *oxalis*
**huckleberry *oso berry *Oregon grape *salal*

- Even smaller, yet equally important **understory species** are the native:
**wild lily-of-the-valley *columbine *wood sorrel *wild strawberry*

Not only on land will one find various plant communities. The water is home to a multitude of plants, both salt and fresh water, from the depths of the sound to the salt marshes and tidal flats, fresh water rivers, to lakes and ponds.

- **Salt marsh species** include:
**tufted hairgrass *salt grass *pickleweed *jaumea *arrowgrass*
**northern starwort *gumweed *Lyngby's sedge *baltic rush *glaux*

- In more **brackish areas**:
**springbank clover *rushes *angelica *Pacific silverweed*
**Douglas's aster *sedges *bulrushes*

Saltwater tidal flats are common habitats around the Puget Sound. Both salt and freshwater tidal areas can be found here.

- In **highly saline tidal flats** below marshes, two *eelgrasses*, which are very important to a number of aquatic species, *Zostera marina and Z. japonica.* Also *bulrush*, which grows in distinctive open patches. Dense tall stands of hardstem bulrush grow in brackish quiet waters.
- *Cattails* are found at the **salt-fresh boundary,** both:
**broadleaf cattail *narrowleaf cattail.*

- In the **subtidal zone**, clusters of *bull kelp* frequent the rocky shore areas. This is the fastest growing seaweed in the world, growing up to 2 feet a day and reaching 200 feet in one summer!

- In the **fresh water** communities around the sound, one might find:
**sneezeweed *wapato *frog-bit *several rushes and sedges *cattails.*

operation, which eventually took over logging operations in most of the Black Hills after consolidating with a couple of its local competitors.

The area's prosperity was carried through the first half of the century by the timber industry, but because of over-cutting and a fall in timber prices, it would be replaced as the area's dominant local industry by state government after World War II. In 1933 the brewery got a boost by the repeal of prohibition and a new facility, which remains today after passing through the hands of multiple owners.

Wars of the 20th century also proved to be good for the local economy. Fort Lewis greatly increased it's operations which created a demand in housing and services for enlisted soldiers and their families, and the area became a permanent residence for many after leaving the military. This growth greatly expanded Lacey, pushing its population past Tumwater's in the 1950's.

Meanwhile, the area's farm sector suffered as homes, offices, and shopping centers extended into the fringes of the urban areas. Farms and farmers were pushed onto the remaining prairies and many were forced to sell their land and move to find other work. Agricultural imports in the Olympia area were becoming the norm as the production from farms east of the Cascade Mountains began to expand with their operations.

Jobs in government agencies, the service sector, and employment in the fishing industry all picked up in the middle of the last century. A large number of people became employed by the Washington Public Power Supply System in the 1970's for the construction of a nuclear power plant at Satsop, near Elma. This abruptly ended in the early 1980's when the project was terminated. In the late 1960's and early 70's, The Evergreen State College (TESC) was established near Olympia. TESC, Saint Martin's College, and South Puget Sound Community College all became noted economic and cultural fixtures in the South Sound region, contributing to the local housing and retail sectors. The current economy of the region is still greatly influenced by the governmental sector, namely state government, which is the largest industry of the South Sound, accounting for 40-50% of the area's economy.

Fishing has been another boom to the local economy, generating over $80

surpass Olympia in size and commercial viability in the 1870's.

The arrival of the Pacific Railroad to the Sound drew new faces into the area to work and live. A good number of these new folk were of Asian descent. By the 1890's, the South Sound region had become dependent on outside markets in the sense that the economy was directly tied to the timber industry. As technology improved and allowed for more intensive cutting, wood products became the major export, and primary driver of the local economy. Because of high competition and steep market fluctuations, the timber industry often struggled to make a profit. As a result of this, the common lumber practice turned to cutting fast and cheap, abandoning the property after the trees had all been felled.

Because of the glacial activity in the region, which left a rocky rubble in its wake, quality agricultural land was hard to come by. Even the prairies for the most part had highly acidic soil, which made for poor crop farming. So the farmers turned instead to the dairy cattle industry. The discovery of gold in the Cascade Mountains drew prospectors from distant lands, though Seattle reaped most of the benefits of this industry as its port received the majority of the traffic. In the last quarter of the nineteenth century, the region's economy was given a boost when coal mining and stone quarrying activity picked up in the area. Sandstone quarries near Tenino drew craftsman from as far away as Europe, which greatly lifted the local economy and significantly boosted Tenino's population. These industries also proved to be fickle, relying on outside markets, which by the end of World War I had all but vanished, at least for the sandstone.

The Olympia Brewing Company, started in 1894 in Tumwater as the Capital Brewing Company, outlived many of its local economic counterparts. One of its secrets was expansion. Actually, it was no secret at all, as the company expanded its operations to the entire lower Cascadia region, eventually spreading to the gold rush towns of what is now called Alaska. The brewery was almost eliminated by state prohibition in 1916, which pushed the economies of Tumwater and Olympia into a minor depression.

The early 1900's saw an increase in service jobs upon the numerous ships and trains that were now frequently passing through. Many of these jobs were held by African Americans who were new to the region. In 1900, a railroad tycoon by the name of James Hill sold 900,000 acres of his company's timberland to Frederick Weyerhaeuser. Weyerhaeuser continued to expand his operations, eventually buying and logging the last old growth stands of the Capital Forest. The Simpson Timber Company was somewhat of a local logging

"Our rainforest is like a tropical forest turned upside down. Instead of most of the action being in the plants, it's underground."

-Bryce Kendrick (fungi expert)

What happens to all those plants when they die? Well, they become fodder for an array of decomposers, such as worms, mites, and beetles that turn the moldering wood, sometimes a few feet thick, into soils that provide a nutrient laden start for many new organisms. Within this decomposing duff exist thousands of species of fungi, many of which form symbiotic relationships with the roots of vegetation. The "mycorrhizal fungi" as they are called, collect moisture and nutrients via root-like networks and pass them along to plants, which in return provide energy-laden sugar to the fungi. Nearly all the vascular plants of the rainforest use fungi to tap into food collected by their neighbors creating a vast network of roots throughout the forest floor.

- Some of the more common, **edible fungi** (mushrooms) one might find when exploring this region include (by common name):
**chantrelle *morel *puffball *oyster *sulfer shelf *shaggy mane*
**hedgehog *button *bolete *lobster *coral *man on horseback*

**** It is strongly recommended that anyone interested in eating wild mushrooms consult an expert or guidebook before doing so.***

Edible Plants:

Some of the edible flora of the Salish Sea ecoregion include:

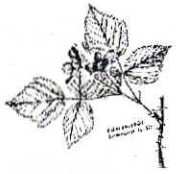
- In the **spring and summer**:
**chickweed *wild onion *camas *cattail *lady ostrich *shield ferns*
**miner's lettuce *sheep sorel *nettles *lamb's quarters *cow parsnip*

- In the **summer**:
**Oregon grape *indian plum *salal *currant*
**thimbleberry *salmonberry *blackberry *camas root*

- In the **fall**:
**huckleberry *kinnikinnick *choke cherry *high brush *cranberry*
**dandilions *mushrooms* (< both can also be found in spring and summer)

*** As with the other flora, experts or guide books should be consulted by the novice harvester.**

5 Essential Native Medicinal Plants of Cascadia



Cascadia is still one of the most medicinally abundant temperate bioregions on the planet! The native plants you encounter everyday are just oozing with medicine for your aching body! Learn to identify, gather, and use one new plant a month. Start with these five must-know stars of Cascadia's apothecary. See Resources section for guides to identification, use, harvesting, and medicine making, and cautions.

1. Stinging Nettles: (*Urtica doica*) Nutritive: vitamin/mineral rich (especially Bs and iron which are great for pregnancy and recuperation!). General tonic. Diuretic, kidney strengthener, blood and tissue builder. Slows bleeding. Useful for sinus allergies, chronic inflammation, excessive mucus, hemorrhoids, swollen prostate, rashes and psoriasis, arthritis and gout, profuse menstrual flow, suppressed milk production, and burning urination. Whew! Use gloves to harvest in spring and early summer. Cook and eat or dry and crumble into your food all year long. (Great in smoothies, teas, soups, casseroles, salads and dressings) Pets love their nettles too!

2. Western Red Cedar: (*Thuja plicata*) Strong antifungal, antibacterial, and immunostimulant. Useful for: athlete's foot, ringworm, jock itch, nail fungi, mucusy bronchitis, and other respiratory conditions. Urinary tract and reproductive organs: chronic vaginitis and sluggish menses; enlarged prostate. Gather bark in summer and fall for highest medicinal value.

3. Oregon Grape: (*Mahonia aquifolia* (Tall Oregon Grape), *M. nervosa* (Dull Oregon Grape)) Bitter tonic: excellent for digestion and GI tract. Liver stimulant: hangover helper! Topical skin disinfectant: antimicrobial. Harvest carefully; this plant is in danger of over-harvest.

4. Coltsfoot: (*Petasites palmatus*) Antispasmodic and nerve sedative. The leaves are excellent for coughs, wheezing, and asthma. Relieves spasms and cramps in the stomach, gallbladder and colon. The root poultice is good for sprains, bumps and bruises. It lessens inflammation, sedates the nerves, and inhibits bacteria on broken skin. An all around great soother and relaxer for working nerves. Harvest leaves mid-June to late August.

5. Devil's Club: (*Oplopanax horridum)* NW wetland ginseng! Strong, safe expectorant and respiratory stimulant; loosens mucus. General tonic for rheumatoid arthritis and other autoimmune disorders. Increases metabolism

Industry and Agriculture in Cascadia

"the facility this part of the country posesses as a commercial nead not be comented on.....every person who has any idear of the locality of the country must be aware of its advantiges as a commertial country. the exporting of lumber from this part of the country at no subsequent period must form a very extensive and profitable buisiness and were the country settled at the preasant I have no [doubt] but what it would soon attract shipping to a larg extent."

-1846, Levi Lathrop Smith (co-founder of Olympia)

The potential for this region, as Mr. Smith stated, really needs no commenting on. The natives realized its potential and took advantage of the many resources it offered. The indigenous inhabitants of this area were engaged in commerce long before the first Europeans sailed into Puget Sound. Trade was the primary form of commerce between the natives, though small dentalium shells were used as objects of barter between some tribes. There was also trade occuring between the coastal and Plateau tribes, in which some tribes such as the Chinook acted as middlemen. Eulachon (a type of smelt) was processed into an oil, mostly by northern coast Salish, and traded throughout the region. Trails lined with oil that would leak from their baskets can still be seen today. Some tribes hosted annual trading festivals, where people of many tribes would come to swap goods.

When the Europeans arrived in the area, a vigorous trade sprang up between the natives and the newcomers. The indigenous people eagerly traded blankets and other such commodities, especially otter pelts, for European made goods like metals, guns, and clothing. Fur trading was in fact the first form of globalization in the region, with harvested pelts being traded and sold to areas as far away as China and Europe. Fort Nisqually became the hub of this region's fur trade in the 1830's. A large cattle and sheep operation was also established by the Hudson Bay Company on the Nisqually plains. The majority of the settlers at this time served the forts as boatmen, herders, blacksmiths, farmers, carpenters, interpreters, clerks, and a number of other "professions".

By the mid-1850's Olympia had been established and had its own newspaper, the first in the Sound region. In its first issue, the paper championed immigration and rapid development of the area. Lumber, shellfish, and coal industries began to spring up around the sound. A number of lumber mills were started around the region, and by the 1860's Olympia had established a modest port and had become a trading center. Rebecca Howard, an African American woman living in Olympia, provided food and accommodations to folks from all over the region at her Pacific House Hotel and Restaurant. It ran from the early 1860's until her death in 1881. Budd inlet was discovered to have a significant number of the now famous, small Olympia oysters, the harvest of which became an important part of the area's early economy. To the chagrin of the oyster, Olympia's port was eventually dredged and deepened in an attempt to keep up with the shipping industries in Tacoma and Seattle, both of which came to

The region, mostly east of the Cascades, saw a dramatic increase in the number of Hispanics, especially from Mexico. They came to fill a void in the farming industry that had been created by would be farmers going overseas to war or moving to the cities to work in industry jobs. Most of the Japanese who lived in the area were taken to internment camps for the duration of the war. After the war, there was another influx of African Americans and Europeans who were returning home or who were looking for work. This trend continued into the 1950's.

The 1960's brought huge changes in the region due to the civil rights movements. African Americans stood up in unison to demand their rights. The second U.S. chapter of the Black Panthers was established in Seattle, where they started a free clinic, tutoring opportunities, and many other community oriented programs. In the spring of 1969 they came to Olympia fully armed to oppose the legislation that aimed to restrict the right to carry firearms in public. The area's anti-immigration laws that were aimed at the Asian community were finally repealed in 1966. Young Chicano leaders organized political protests, demonstrations, and boycotts throughout the region, demanding an end to discrimination and unfair labor practices.

Concurrently in the 1960s, local tribes began to protest the government's continual night raids by state wardens and the dishonoring of treaties that guaranteed their rights to the fish on their ancestral lands as part of their cultural heritage. Fish-ins were held on the Nisqually and other rivers, but often ended in bloody conflict with local and state law enforcement. The ugliest and bloodiest of these events took place on October 13, 1965 during the Battle of Frank's Landing at Nisqually. Then governor Dan Evans summed up the official policy toward Indian fishing rights when he said, "The Indian treaty is nothing but a worthless piece of hundred-year old paper and it isn't even worth the paper it's written on." Finally, in 1974, in United States vs. Washington state, federal judge George Bolt officially restored the tribe's fishing rights and established the tribes as co-managers (with the state of Washington) of the salmon resource, entitling tribes to 50% of the annual salmon harvest.

Yes, change was in the air, some of it positive, some negative. Over the last couple of decades, the Puget Sound region has seen quite dramatic increases in population. Some say it's too many, too quickly. Others say its progress. However one looks at it, the diversity of individuals coming to the region remains greatly varied. Some come from Africa, seeking escape from war and political repression in their homelands. Some come from the Middle East seeking an education or employment. Others come from Asia for these and other opportunities. Whether it be industry or agriculture, lumber or gold, salmon or skins, this area has attracted people for thousands of years because of its vast opportunities, its great potential, and its natural wealth.

and is useful for stress. Natives have used this spiny plant successfully in the treatment of Type II diabetes, blood sugar issues, sugar cravings. Be sure to bring heavy-duty gloves when you harvest! Gather roots and bark in late summer and early fall. Bark may also be collected in early spring for fresh tincture.

(Please be ethical. Gather reverently and ask permission from private landowners and of the plant. Harvest only in areas of abundant growth. Leave no trace. Enjoy!)

- **Endangered plants** of our region include:
**golden paintbrush *marsh sandwort *Nelson's checker-mallow *water howellia.*

One of the reasons behind the disappearance of some of the region's native plants, besides pollution and habitat destruction, is the **invasive species** that have made their way into our ecosystem. These species are foreign, and often out-compete with native plants for food and space, many times completely overrunning an area. What to watch out for:

- **Inland invasive species**:
**Himalayan blackberry *scotch broom *Japanese knotweed *leafy spurge *reed canary grass *purple nutsedge *mediterranean sage *gorse *pepperweed *yellow starthistle *sulfur cinquefoil *black knapweed*

- **Aquatic invasive species**:
**Eurasian milfoil *Brazilian elodea *fanwort *purple loosestrife *giant hogweed *fragrant water lily *hydrilla *water primrose *milfoil *yellow floating heart *water hyacinth *indigobush *Atlantic marsh grass *Japanese eelgrass*

- **Plant Diseases:** Common diseases and parasites that attack the local flora.....
**Port-Orford-cedar root disease *sudden oak death pathogen *dogwood anthracnose *Dutch elm disease *larch casebearer *European larch canker *balsam woolly adelgid *banded elm bark beetle *common or larger pine shoot beetle *Asian longhorned beetle *emerald ash borer *brown longhorned spruce beetle.*

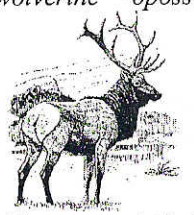
*** For identification methods, a more complete listing, and better descriptions of range and physiology, refer to the *Resources* section in the back of this zine.**

The Fauna of Cascadia

With such a vibrant variety of plants in our bioregion, it comes as no surprise that one will also find a great diversity of animals here, both on land and in the sea. For millenia the fauna of Cascadia have co-evolved with the expanding plant ecosystems to create one of the richest biomes in the world. From the majestic Roosevelt Elk of the Olympics to the greatest concentrations of geoduck clams in the world, the Puget Sound ecoregion is no exception to the diversity found in the web of ecoregions that are Cascadia.

- Besides the Roosevelt elk, some of the other **mammals** that are common to this bioregion include:

**Rocky Mountain elk* (also known as the *wapiti) *cougar (mountain lion) *lynx *black-tailed deer *white-tailed deer *moose *mountain goats *big horn sheep *antelope *black bear *grizzly bear *coyote *vole *black-tailed hare *eastern cottontail *raccoon *beaver *muskrat *nutria *belding ground squirrel *California ground squirrel *red fox *Cascade golden-mantled ground squirrel *chipmunk *Douglas squirrel *red squirrel *pine marten *yellow-bellied marmot *raccoon *badger *fisher *mink *river otter *sea otter *big-eared bat *striped skunk *wolverine *opossum *white-footed mouse *the little brown bat*



There are relatively few **reptiles** and **amphibians** in the Cascadia bioregion - under a hundred different species in fact, compared to 9300 known species worldwide. A cooler climate eliminates preferable living conditions for many of these animals, but some of the species that do prefer this region can be found in great abundance. Some are found nowhere else in the world. In fact, three entire families of amphibians are endemic to Cascadia; most of these are salamanders that are highly adapted to living in the clear, cold streams of our temperate rainforests.

- **Reptiles** and **amphibians** of this region include:

**Puget Sound garter snake *painted turtle *water and box turtles *short-horned lizard *western fence lizard *western terrestrial garter snake *common garter snake *gopher snake *rubber boa *racer *ensatina *western rattlesnake *western skink *pacific treefrog *tailed frog *northern leopard frog *Cascade frog *rough-skinned newt *western toad *western redback salamander *long toed salamander *red-legged frog *Pacific giant salamander*

fighting back in what would become the worst war of the region's history. The United States army became increasingly involved, and by the fall of 1858, had defeated most of the remaining native warriors. The original peoples of the region, who for thousands of years thrived in their rich environment, would now find themselves confined to reservations, engaged in continual political struggle for the few remaining rights to the resources they depend upon.

A Multi-Cultural Migration

The indigenous people of the region were not the only ones facing discrimination. Hawaiians were refused the right to become citizens in the newly formed Oregon territory, and faced enough racist discrimination to force many of them back to Hawaii or farther south along the coast.

By the 1860's, many Chinese were arriving to seek gold that had been discovered in the Cascade Mountains. By the 1870's, the number of Chinese had greatly increased when they were brought in to work on the railroads, and a little later, the coal mines. Regulations and prohibitions were continually passed to "protect" the white settlers from competition by the Chinese. In 1882, the Chinese Exclusion Act was passed by the United States government, which sought to limit Chinese immigration into the region. This legislation continued to further hinder the rights of the Chinese and other Asian groups who would later move into the region. A couple of these groups include the Japanese and the Koreans who began to arrive in the early 1900's. They worked mainly as laborers, but some eventually started farms, small businesses, or became involved in the salmon industry.

The late 1800's saw a large influx of many people from various ethnic backgrounds. Many African Americans made there way here in what was to be the first of two periods which saw a great increase in their numbers. Many Europeans were again arriving to the area. A great number of people from Nordic countries came in the early 1900's, proportionately more than any other ethnic group. There were also a lot of Germans and people from Great Britain, two groups whose numbers remain high even today.

The Twentieth Century

The 1920's saw a building spree in the Olympia area, with the addition of a state capitol building and "campus" completed in 1927. With this spree came a number of jobs which attracted more people into the area causing an expansion of the urban centers. The great depression of the 1930's hit some areas of Cascadia harder than others. Olympia, Lacey, and Tumwater received a little reprieve because of the state employment and federal financial assistance that remained in place throughout the depression.

Soon after the depression came World War II, which brought increased changes to the region. People of different ethnic groups began to arrive for the first time. Families from the Middle East came to the region and established communities in the 1940's.

claim land to live on. The claims were called Donation Land Claims in which a single person could claim 320 acres of land and a married couple could claim 640 acres. People from the east traveled west to claim land. Most of the settlers were of European descent, many Scottish and French- Canadian, some Russian and British-American. Many came by way of the Oregon Trail, and while some made it close to the Puget Sound area, the majority stayed south of the Columbia River because of the better farming opportunities in the Willamette valley.

In 1846, Colonel Micheal T. Simmons led the first group of settlers into the Puget Sound region, where he staked a claim near the Deschutes river waterfalls. He called the settlement New Market, which later became Tumwater. Levi Lathrop Smith and Edmond Sylvester laid claim to a small peninsula jutting into Budd Inlet two miles north of Tumwater. They called it Smithfield, which was later renamed Olympia. Among the party of settlers that arrived with Simmons were some of the first people of African descent to reach Cascadia. A family of eight, they were led by a strong willed father who dreamed of freedom and his own farm. His name, George W. Bush.

In 1853, Isaac Ingalls Stevens established Olympia as the Capitol of the newly formed Washington Territory, of which he was the first Governor. Shortly after the founding of Tumwater and Olympia, Isaac Wood founded a village east of Olympia which he called Woodland. In 1891 the name would be changed to Lacey.

Tensions Rise

As more people began arriving to the thriving settlements, tensions arose between the settlers and the natives, who were by this time feeling the influence from the new arrivals. By the 1840's, Protestant and Catholic missionaries had come into the region to proselytize the native people. Their attempts at converting the native peoples were met with mixed success. Some of the natives accepted the new philosophies while others rejected or even condemned them. The native communities became divided between pro-and anti-Christian and Catholic factions. Their communities also became increasingly devastated by new diseases that continued to arrive with the settlers. In 1847, a measles epidemic swept through the Plateau region severely affecting the tribes of that area.

The "American Indian policy" came to the region in 1853. This included the liquidation of the native's title to the land and the subsequent removal of the native people to reservations, where they would be governed by the Bureau of Indian Affairs. As one would guess, the native people did not welcome this policy. Between 1853 and 1855 a number of treaties were proposed to the natives, which were often met with confusion because of the "Chinook Jargon", a native trade language that was used to explain the treaty's purposes. Many native leaders rejected the treaties, only to have their signatures forged upon them.

1855 saw the beginning of the Yakima War, which lasted until 1858. Native people, fed up with the intrusion of the white settlers upon their lives, began

- Cascadia's temperate climate provides an ideal habitat for many species of **insects,** both aquatic and non-aquatic. Besides the pesky *mosquito* that we are all well aware of, other insects of Cascadia include:
**honey bee *yellow jacket *black beetle *lorquin's admiral *caddisfly *swallowtail butterfly *white butterfly *dragonfly *damselfly *water boatman *water strider *western tiger butterfly*

- There are also an abundance of **spiders** in the region, with an astounding 760 known species in the Washington area alone.

The west coast of Turtle Island is home to a multitude of **birds**, some permanent residents; and some of which reside here only during the summer, or just to rest as they migrate through from other regions.

- There are numerous **migratory shorebirds**, which include:
**black-bellied plover *pigeon guillemot *lesser yellowlegs *coot*

- Numerous ducks also make their way through the area, some of which are **fishing sea ducks**:
**red-breasted merganser *hooded merganser *common merganser*

- some **"pochard" sea ducks:**
**oldsquaw *barrow's goldeneye *Pacific eider *king eider *harlequin *bufflehead *black scoter *surf scoter *white-winged scoter*

- Some of the **fresh water ducks** that can be found in Cascadia include:
**gadwall *eurasian and american widgeons *mallard *northern shoveler *green, blue, and common winged teal *black-headed grosbeak *pintail *Canada geese* (migrate through the area, though many stick around through the year)

- A variety of other **birds** occupy this region throughout the year as well:
**bald eagle *peregrine falcon *great horned owl *barn owl *spotted owl *black capped chickadee *song sparrow *belted kingfisher *ptarmigans *black oystercatcher *purple finch *great blue heron *winter wren *stellar's and scrub jays *red-tailed hawk *yellow-rumped warbler *red-breasted nuthatch *downey and hairy woodpeckers *killdeer *crow *rufous sided towhee *ruffed grouse *pileated woodpecker*

- Particular species of **birds** migrate at different times of the year. As a result of this, we find different birds passing through in different seasons,

- some in **summer:** **rufous hummingbird *sapsucker *pine siskin *vireo *western bluebird *flycatcher *waxwing *cowbird *three types of swallows*
- some in **winter**: **varied thrush *hermit thrush *coot *ruby-crowned kinglet*

- One cannot forget those little slimy **slugs** which make their way underfoot after a warm summer rain in Cascadia - the *banana slug,* which is the second largest slug in the world and is one of many slugs in the region including:
**great gray garden slug* **tiger slug* **spotted leopard slug*

- A couple of local **snails** include: **banded wood snail* **crinkled ambersnail*

There are over 2,000 species of slugs and snails west of the Rockies with a conservative estimate of 23 different slug species in the Olympic Peninsula.

Life abounds in the Puget Sound. The Sound is a highly productive inland sea that provides critical habitat for populations of many sea creatures. A huge estuary, with over 2,000 miles of shoreline, and 12 major rivers pouring into it, the Sound is comparible to a rainforest in its diversity. It is also a link between the Salish Sea ecoregion and the Pacific ocean, an inland arm of the Pacific, if you will. Sea life in the Sound also reflects that of the Pacific, with many common species inhabiting both.

- There are hundreds of species of **aquatic animals** in the Sound, and many more up and down the Cascadian coasts, both of which include:
**sea stars* **anemones* **coral* **sea slugs* **snails* **limpets* **octopus*
**chitons* **worms* **sponges* **sea cucumber* **rockfish* **ghost shrimp*
**jelly fish* **kelp crab* **abalone* **squid* **sea urchin* **decorator crab*
**sea turtles* **sculpin* **flatfish* **lingcod* **sablefish* **sand lance*
**surf smelt* **flounder* **gobbie* **greenling* **gunnel* **perch* **pipefish*
**poacher* **prickleback* **ronquil* **sculpin* **lumpfish* **skate* **toadfish*
**tube snout* **wolffish* **chimera* **cod* **cow shark* **dogfish shark*
**eelpout* *many species of *shellfish, clams and mussles*

- Many species of **marine mammals** call the Cascadia bioregion home, 14 of which can be found in the Sound:
**greysand orca* **bottlenose dolphin* **dall's porpoise* **gray whale*
**humpback whale* **sea lion* *five species of *seals*

- Further up the streams and rivers, out of salt water, and in the lakes and ponds of the region are found numerous **freshwater fish.** Some of these species include:
**cutthroat trout* **bull trout* **dolly varden* **brook trout* **pacific* **shad*
**river and western brook lamprey* **green and white sturgeon* **whitefish*
**longfin smelt* **eulachon* **Olympic mudminnow* **dace* **redside shiner*
**Salish sucker* **largescale sucker* **brown bullhead* **channel catfish*
**three-spine stickleback* **rock bass* **pumpkinseed* **bluegill* **yellow perch*
**largemouth bass* **smallmouth bass* **black crappie*
*many species of *sculpin*

Cascadia region via the Pacific ocean, but didn't stick around to explore. In 1775, the native peoples experienced what was to begin a twenty-year epidemic of smallpox, measles, and other European diseases, which would devastate their populations. Without any immunity to the diseases brought by European explorers and traders, the native people quickly succumbed. Often, nearly the entire tribe would die because whole communities lived in such close proximity to one another.

Other explorers began to arrive in the area shortly after the Spanish. The English in particular were eager to lay claim to new territory and sent James Cook in 1778, Captain Charles Barkley in 1787, and Captain George Vancouver in 1792 to explore and document what they found. Vancouver sent his Lieutenant Peter Puget to map an inland sea that they had sailed into, and when Puget successfully returned with maps and information, Captain Vancouver named the waterway Puget Sound in his honor. A huge mountain they sighted south of Puget Sound was named Mount Rainier after Admiral Rainier of the English navy.

Traders and Settlers

Many of the people to arrive at this time were fur traders and sought the sea otter pelts, which were popular in Europe and China. Some of the first non-native people to explore this region were native Hawaiians who were employed as sailors by the fur traders, and who became skilled traders themselves. Soon, the Spanish and English were quarreling over control of the Cascadia area, finally agreeing to designate the area as neutral ground in 1794. As the sea otter had been nearly exterminated, few really cared any longer about pressing claims on the region.

In 1788 the logging industry kicked off when British Captain John Meares shipped out the first logs to China from the Cascadian coast. The logging would not really expand though until the mid-1800's. In 1805, a group of European explorers led by Lewis and Clark ventured across Cascadia during their "Corps of Discovery" expedition to the mouth of the Columbia River, where they establish Fort Clatsop. Around 1810, forts and trading outposts began springing up along the Columbia River and throughout the Columbia basin. In 1824, Fort Vancouver was established on a plain north of the Columbia. By 1840 it had become a prosperous settlement, agriculturally self-sufficient, with approximately 600 settlers. Similar settlements began to spring up in the 1830's, and in 1833 Fort Nisqually was built near present day Dupont. Virtually all of the settlers to arrive in this area lived close to the six Hudson Bay Company forts that existed here in the 1830's.

The Settling of the Southern Sound

In the 1850's the part of Cascadia claimed by the United States was opened up for settlement by the U.S. government. Puget Sound was in part of the Oregon Territory at this time and settlers were allowed to move into the area and

Puget Sound was part of **west Cascadia**, a coastal region of tribes whose dialects were part of a linguistic group referred to as Salish. The tribes who were directly on the ocean were similar to those of the Puget Sound region and surrounding areas. However, these tribes relied more on food from the sea, such as salmon, seals, sea otters, whales, and other animals. The coastal climate was too foggy and wet for maize agriculture, but people learned other agricultural techniques such as transplanting, seeding and field burning that improved the yields of indigenous plants. They also cultivated a modest amount of tobacco.
* Tribes on the **lower Cascadian coasts** include: *Makah, Klallam, Hoh, Lummi, Muckleshoot, Quinault, Quileute, Chehalis, Cowlitz, Chinook, Siletz, Tillamook, Coos, Umpqua, Siuslaw, Cow Creek Umpqua, Coquille, Grand Ronde and Takelmas* tribes; and on the **upper coasts**: *Tlingit, Haida, Tsimshian, Bella Coola, Kwakiutl and Nootka* tribes.

Eastern Cascadia, the interior region, characterized by its plateau, had a culture of people who were a bit different than the coastal tribes. Their linguistic group is commonly referred to as Sahaptian. These "people of the Plateau" moved from place to place throughout the year to gather edible vegetables, fruits, roots, bulbs, and berries including camas, kouse, bitterroot, biscuit root, serviceberry, chokecherry, huckleberry, and wild strawberries. They ate salmon too, and hunted elk, deer, and bear. These people lived in groups in long houses, but because there was not much wood in the Plateau area, they made frames of poles and covered them with grass mats. Eventually they began to make use of teepees.
* Some of the tribes associated with the **Plateau area** include: *Coeur d'Alene, Colville, Nez Perce, Cayuse, Umatilla, Tygh, Snake, Columbia, Wanapum, Yakima, Spokane, Palouse, and Walla Walla.*

Early European Explorers

The first non-native peoples began to reach areas close to the Cascadia region in the early 1500's. Hoping to find a "strait" or short cut that would take them across the newly discovered continent, the Spanish began sailing further and further up the western coast of the continent. They may have reached the southern tip of Cascadia as early as 1540, but none made it ashore in this region until much later.

In the early 1700's, Russians sailed to the Aleutian islands, where they began a reign of terror over the natives and wildlife, exterminating 90 percent of the region's native peoples and virtually eliminating the wildlife of the area. Fortunately, they didn't reach the Cascadia region until the early 1800's. Another European explorer did reach the eastern Plateau region in the early 1700's - the horse. Traded to Plateau tribes by the Plains natives, the horse, which had originally escaped their Spanish counterparts in the 1540's in the south of the continent, had become wild, domesticated again by the natives, and were traded into the Cascadia region.

In 1774, a Spanish expedition led by Juan Perez made its way to the

Invasive Species of Fauna

A number of foreign visitors have come to vacation in the Cascadian Bioregion. Because they have decided to stay (and because they are non-human), we now refer to them as invasive species. Invasive, because they often out-compete with native species for food and habitat. Some of these include:

- **Aquatic invasive species** in the inland marine waters of Puget Sound:
**oyster drill *varnish or dark mahogany clam *European green crab *Chinese mitten crab *purple varnish clam or mahogany clam.*

- **Freshwater invasive species** include:
**Asian clam *New Zealand mudsnail *European green crab *red swamp crayfish*

- **Inland invasive species** include:
**Japanese beetle *apple maggot *gypsy moth *citrus longhorned beetle *European starling *bullfrog *Asian long-horned beetles*

Endangered Species of Fauna

An unfortunate number of fauna, which once flourished in the region, are now endangered of becoming extinct. Habitat restoration is critical for their survival. Here are only a few....

- **Mammals**:
**Columbia white-tailed deer *gray wolf *grizzly bear *harbor porpoise *western grey squirrel *lynx *fisher *mountain caribou*
- **Birds**:
**Aleutian Canada goose *brown pelican *marbled murrelet *northern *spotted owl *peregrine falcon *western snowy plover *sandhill crane *sage grouse*
- **Reptiles:**
**green sea turtle *leatherback sea turtle *loggerhead sea turtle *olive ridley sea turtle *western pond turtle.*
- **Insects**:
**Oregon silverspot butterfly *Taylor's checkerspot *mardon skipper *island marble butterflies*
- **Amphibians**:
**red-legged frog*
- **Fish:**
**Cherry Point herring*

* For identification methods, a more complete listing, and better descriptions of range and physiology, refer to the **Resources** section in the back of this zine.

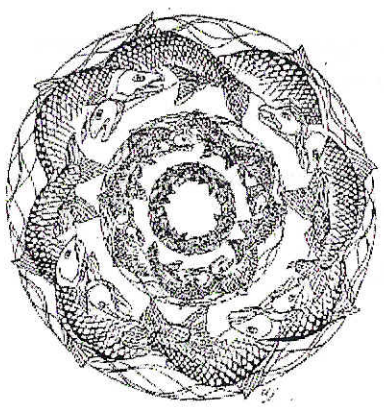
Salmon of Cascadia

Have we forgotten? Of course not. How could any list of Cascadian fauna be complete without that flagship organism, the ***Pacific Salmon***. The importance of the Pacific salmon to this region is reflected in its migratory patterns. Widely variable over space and time, their migrations connect the forest, rivers, wetlands, and ocean into a set of linked habitats that provide the mechanism through which nutrients are transferred from the rich ocean environment to the land itself. Many life-forms benefit either directly or indirectly from this nutrient web, including humans. Humans in fact, have relied on the salmon for thousands of years for survival, and much of the region's economy has sprung up around the salmon fisheries. That side of the story is yet to come though. Now its time to take a look at the salmon's perspective.

To summarize the life story of the salmon would be to sell it short for what it really is, and would undermine its importance. Individuals unfamiliar with the details of the region's salmon are encouraged to use the resources in the back of this zine to further their understanding. But for now, here is a little intro into the salmon of Cascadia.

There are 5 species of salmon in the Cascadian Bioregion, and another two which are called trout, but which are closely related to, and have life cycles very similar to the region's **salmon**, which include:

* **Chinook** (or *King*) are the largest of the Pacific salmon, weighing up to 70 lbs (record 127 lbs), a result of their five to seven years spent at sea foraging. They consume small fish during their journey, such as sand lance when they're young, smelt and herring as they mature. Their journey brings them back to their rivers of origin between May and October.

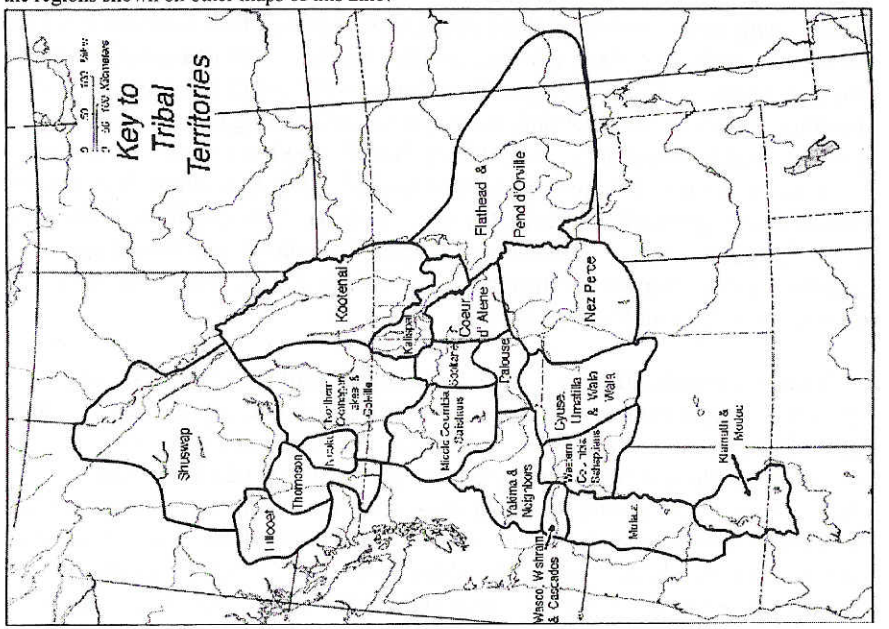


* **Coho** salmon are the second largest of this region, weighing up to 15 lbs. (record 37lbs 7oz)Their lifespan is usually three years, two of which are spent in the ocean eating marine life very similar to that in the Chinook's diet. They are bright silver in color. The Coho's migration brings it back to our region between late October and mid December.

* **Chum** salmon (or *Keta*, or *Dog Salmon*) grow to 10 lbs (record 32 lbs) in their three to five year life span. They have silvery sides with faint grid-like bars dotted with black specks. Their diet consists primarily of plankton and crustaceans such as tiny shrimp. The Chum's migration brings it back to the region's rivers in the late fall, usually early November or later.

Native American Maps

Maps depicting the approximate territories of the major tribes of Cascadia prior to European arrival. The bottom 2 maps show tribal areas of the Salish group of the early indigenous peoples, the top map contains the Plateau tribes' homelands. Notice any similarities between their regions and the regions shown on other maps of this zine?



Below is northern Cascadia, Above is the lower Cascadian coast

Handbook of North American Indians. V.7: Northwest Coast
Edited by Wayne Suttles. Washington: Smithsonian Institution, 1990

Native Peoples and Settlers of Early Cascadia and Now

For over 500 generations they flourished, the Salmon People - the early peoples of the Pacific coast; the peoples inhabiting the interior of our region - people of the Plateau. For thousands of years the people of the Cascadia Bioregion have lived as one with the earth, with the plants and animals that were part of their everyday life. It has been said that few places on earth provided early humans with such perennial abundance in return for so few months labor as did the Cascadia region.

An inherited respect for this natural bounty maintained throughout the native's existence allowed the ecosystems of the region to flourish in a mutually beneficial relationship. Ancient artifacts and modern science have suggested that the earliest peoples of this region arrived as far back as 28,000 years ago, possibly earlier, from what is now considered Asia. Evidence that humans were hunting for salmon on the Columbia River dates back at least 11,000 years.

When asked, many natives whose ancestors inhabited this region will tell you that they are not from Asia, but of the earth, placed in these lands by divine providence. The land is their religion, and their spiritual beliefs are intimately tied to the natural world. The many diverse groups of indigenous peoples of this region have been, and still are, part of a larger understanding and reverence for the sacred - an intimate connection between them and their history, their ancestors, and the very ground upon which this was all made possible.

Some of these groups of people inhabited the Puget Sound region. Always resourceful, they took advantage of the plentiful resources from the region. The abundance of huge cedars created an array of uses for every part of the tree. Cedar planks were used to build large wooden houses, big-houses as they were called, which were from 20 to 60 feet wide and from 50-150 feet long. These houses would hold many families, up to 400 people in fact. Clothes such as skirts and capes were woven from cedar bark, and baskets for cooking were woven from cedar roots. Wooden canoes carved from cedar carried the natives and their cargo to trade, visit, or war with other tribes.

Salmon from Puget Sound and the nearby rivers were plentiful, and an essential part of the people's diet almost year round. Some of the salmon were cooked and eaten right away while other salmon were frequently smoked or dried, pulverized and mixed with berries. Salmon, halibut, euchalon and herring were caught with nets, lines, spears, wiers, and traps. Other game included deer, elk, geese and ducks. Berries were gathered and eaten fresh or dried. Vegetable roots such as camas, fern and wapato were dug up and cooked as part of their diet, as were chokecherry, golden currant, indian bread root, bitterroot, bitter brush, mock orange, and onions.

* The **upper Puget Sound region** was inhabited by various "Coastal Salish" tribes such as the *Samish, Stillaguamish, Suquamish, Swinomish, Upper Skagit, Tulalip, Nooksak, Skokomish, and Duwamish;* the **lower Puget Sound** by: *Puyallup, Nisqually, and Squaxin.*

* **Sockeye** are the slimmest and most streamlined of the five species of Pacific salmon. They are blue-tinged silver in color, and are the most colorful salmon during their migration up-stream, with the males taking on a bright, fiery red color. Sockeyes live four to five years and weigh up to 12 lbs. (record 15lbs 3oz) - weight gained from a diet of plankton and crustaceans. They return to their rivers of origin in late summer and early fall.

* **Pink** salmon are the smallest of the Pacific salmon, gaining only up to 5 or 6 lbs (record 14.5 lbs) in their short two year lifespan. They have heavily spotted backs over silver bodies. Pink salmon are also the most plentiful of the five species. Like the chum and sockeye, they too eat primarily plankton and crustaceans. Their migration brings them home mid fall.

The other two "salmon" as they are sometimes referred to are the **steelhead** and the **cutthroat trout**. Unlike Pacific salmon, both steelhead and cutthroat adults may survive after spawning to migrate again to the ocean. Some of these trout never even reach the ocean, spending their whole lives in freshwater. The trout that do migrate to the ocean, do so in ways similar to the salmon. Cutthroat usually stay in the estuaries or near-shore waters, rarely migrating more than 40 miles offshore and usually return to freshwater later that same year in summer or fall. Steelhead may remain near their natal stream or migrate long distances, such as to the Gulf of Alaska. Some may spend as little as one year or up to four years in their natal stream before migrating to the ocean. Seawater residency for steelhead may be for as short as several months or as long as four years. Cutthroats range from 6 to 20 inches, depending on whether or not they migrate. Steelhead can grow to over 2 feet and can weigh over 10 lbs.

Each year an estimated 10 billion salmon smolt (juvenile salmon) pour into the Pacific Ocean and enter the Gulf of Alaska from surrounding rivers as far south as the southern tip of Cascadia. After hatching and moving out of the gravelly stream bottoms, the young salmon make their way to estuaries, where they spend weeks or months feeding, growing and adapting to salt water before moving out to sea. This is a process called smoltification, in which changes in body chemistry, appearance, and behavior occur. These near shore regions provide some protection for young salmon. Shallow tidal channels with eelgrass and fringing marsh plants offer places for the smolts to forage and hide. When salmon return from sea as adults, they pause again in estuaries to adapt to freshwater, before heading upstream to spawn.

Without salmon, the forests and streams of the Cascadia Bioregion could never have become so richly populated with their diverse flora and fauna. Likewise though, without healthy forests and streams, the fish cannot and will not survive. Drastic alterations of Cascadia's landscapes and over-fishing have wiped out 106 populations of salmonids and put 214 more at risk. Changes to the rivers, loss of marshes and shoreline vegetation, pollutants, bulkheads, docks and piers have all contributed to the declining salmon numbers. These changes have taken place over a relatively short amount of time as the region has seen its human population soar. The Cascadia Bioregion is no longer as it was for the people who inhabited it for thousands of years before "civilization" arrived.


ECOREGIONS
of
CASCADIA
N
W
E
S
St. Elias-Yakutat
Alsek-Tashenshini
Glacier Bay
Taku
Tlingit Archipelago
Stikine Plateau
Stikine-Iskut
Skeena-Nass
Haida Gwai (Q.C. Islands)
Lower Skeena-Nass-Prince Robert
Takla Stuart-Bobine Lakes
Bulkley
Nechako Plateau (The Lakes District)
Fraser Basin-Prince George
Coastal Gap-Bella Coola
Fraser Headwaters
Anaheim-Tweedsmuir
Caribou-Quesnel Highlands
Chilcotin-Nazko Plateau
Kwakfutl
Thompson-Clearwater Highlands
Fraser Plateau
Columbia Icefields
Icefields Fjordland-Sunshine Coast
Lillooet
Shuswhap-Monashee Highlands
West Coast
Kamloops-Nicola Plateau
Georgia Strait
Lakes-Kokanee
Okanogan-Kettle Highlands
Kootenay
Olympic
Mountain Valleys
Salish Sea
Chehalis Willapa
Kutenai Kallispell
Chinook-Tillamook
Cowlitz-Lewis
Columbia Plateau
Coeur d' Alene-Spokane
Yakama
Columbia Gorge
Palouse
Flathead
Willamette
St. Regis
Alsea Siletz
Snow Cap Plateau
Walla Walla-Umatilla
Nez Perce: Clearwater-Selway
Siuslaw-Dunes & Lakes
Blackfoot-Clark Fork
Nez Perce: Wallowa-Grand Ronde
Ochoco-John Day
Coos-Coquille
Deschutes-High Lava Desert
Salmon
Rogue-Umpqua
Malheur
Lemhi-Challis
Redwood-Humboldt
Klamath-Siskiyou
Klamath Lakes
Snake River Plain
Sawtooths
Boise-Payette
Shasta
Trinity
Sun Valley-Wood River
Lost Rivers
Yellowstone-Tetons
Cape Mendocino-Mattole
Shoshone
Upper Eel-Yolla Bollys
Bannock
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